

REMARKS

Following entry of this response and amendments, Applicant respectfully requests withdrawal of the finality of the office action and mailing of a Notice of Allowance. Applicant thanks the Examiner for his time and consideration in discussing this response on the telephone.

In the application claims 1-149 are pending, with claims 3, 46, 48, 67, 72, 75, and 82 having been previously withdrawn from consideration. In the office action, the Examiner allowed claims 4-19, 51-53, 57-62, 65-66, 68-71, 73-74, 76-78, and 83. The Examiner noted as allowable claims 25-42, 44-45, 49-50, 80-81, 102-111, 116-117, 119-128, 133-134, 136-140, 144-149. The Examiner objected to claim 139. The Examiner rejected under §112, 2d para., claims 2, 124-135, and 140. The Examiner finally rejected under §102 claims 1, 2, 79, 84, 88-90, and 96-101. The Examiner finally rejected under §103 claims 20-24, 43, 47, 54-56, 63-64, 85-87, 91-95, 112-115, 118, 129-132, 135, and 141-143.

In the Office Action, the cover sheet incorrectly lists the rejected claims to include the allowable claims and some of the objected-to claims.

By this amendment, Applicant has cancelled all claims rejected under §§102-103, without prejudice. These cancelled claims are: 1, 2, 20-24, 43, 47, 54-56, 63-64, 79, 84-101, 112-115, 118, 129-132, 135 and 141-143. Additionally, Applicant has cancelled claim 140, without prejudice.

Also by this amendment, as detailed below, Applicant has amended some of the allowable claims, which will place them and the allowable claims dependent upon them, in a condition for allowance. As such, Applicant asserts that all non-cancelled claims are now in a condition for allowance.

Amended Claims 11-15

Applicant has amended these claims to delete the first word, "A", of each claim and replace it with the word "The". Each of these claims is a dependent claims, and to comply with proper claim drafting form, should begin with the word "The". Applicant asserts that these amended claims are now in a condition for allowance.

Amended Claim 25

Applicant has amended this claim to include all of the limitations of independent claim 24, from which it previously depended. Applicant asserts that this amended independent claim is now in a condition for allowance.

Amended Claims 26-30

Applicant has amended these claims to change their dependency from rejected independent claim 24, to allowable amended independent claim 25. Applicant asserts that these amended claims are now in a condition for allowance.

Amended Claim 31

Applicant has amended this claim to include all of the limitations of independent claim 24, from which it previously depended. Applicant asserts that this amended independent claim is now in a condition for allowance.

Amended Claim 34

Applicant has amended this claim to correct step references within the claim to conform to the steps listed amended independent claim 31, from which it depends. Applicant asserts that this amended claims is now in a condition for allowance.

Amended Claim 39

Applicant has amended this claim to include all of the limitations of independent claim 24, from which it previously depended. Applicant asserts that this amended independent claim is now in a condition for allowance.

Amended Claim 42

Applicant has amended this claim to include all of the limitations of independent claim 24, from which it previously depended. Applicant asserts that this amended independent claim is now in a condition for allowance.

Amended Claims 44-45

Applicant has amended these claims to change their dependency from rejected independent claim 24, to allowable amended independent claim 42. Applicant asserts that these amended claims are now in a condition for allowance.

Amended Claim 49

Applicant has amended this claim to include all of the limitations of independent claim 47, from which it previously depended. Applicant asserts that this amended independent claim is now in a condition for allowance.

Amended Claim 80

Applicant has amended this claim to include all of the limitations of independent claim 79, from which it previously depended. Applicant asserts that this amended independent claim is now in a condition for allowance.

Amended Claim 102

Applicant has amended this claim to include all of the limitations of independent claim 98, from which it previously depended. Applicant asserts that this amended independent claim is now in a condition for allowance.

Amended Claim 106

Applicant has amended this claim to include all of the limitations of independent claim 1, from which it previously depended. Applicant asserts that this amended independent claim is now in a condition for allowance.

Amended Claim 116

Applicant has amended this claim to include all of the limitations of dependent claim 115, from which it previously depended, and of independent claim 1, from which dependent claim 115 previously depended. Applicant asserts that this amended independent claim is now in a condition for allowance.

Amended Claim 119

Applicant has amended this claim to include all of the limitations of dependent claim 87, from which it previously depended, of dependent claim 85, from which dependent claim 87 previously depended, and of independent claim 1, from which dependent claim 85 previously depended. Applicant asserts that this amended independent claim is now in a condition for allowance.

Amended Claim 124

Applicant has amended this claim to include all of the limitations of independent claim 2, from which it previously depended. Applicant has also amended this claim to correct §112 rejections by replacing the phrase "an overflow condition" with --said overflow condition-- in the first means-for clause of the claim to provide proper antecedent basis. Applicant asserts that this amended independent claim is now in a condition for allowance.

Amended Claim 133

Applicant has amended this claim to include all of the limitations of dependent claim 132, from which it previously depended, and of independent claim 2, from which dependent claim 132 previously depended. Applicant has also amended this claim to correct §112 rejections by replacing the phrase "an overflow condition" with --said overflow condition-- in the first means-for clause of the claim to provide proper antecedent basis. Applicant asserts that this amended independent claim is now in a condition for allowance.

Amended Claim 136

Applicant has amended this claim to include all of the limitations of independent claim 20, from which it previously depended. Applicant asserts that this amended independent claim is now in a condition for allowance.

Amended Claim 139

Applicant has amended this claim to correct objections by replacing the phrase "newdata" with --new data--. Applicant asserts that this amended claim is now in a condition for allowance.

Amended Claim 144

Applicant has amended this claim to include all of the limitations of dependent claim 143, from which it previously depended, and of independent claim 20, from which dependent claim 143 previously depended. Applicant asserts that this amended independent claim is now in a condition for allowance.

Amended Claim 146

Applicant has amended this claim to include all of the limitations of dependent claim 91, from which it previously depended, and of independent claim 20, from which dependent claim

91 previously depended. Applicant asserts that this amended independent claim is now in a condition for allowance.

The following claims, because of the previously discussed amended claims, do not require alteration: claims 32-33, 35-38, 40-41, 81, 103-105, 107-111, 120-123, 125-128, 134, 137-138, 145, and 147-149. Applicant asserts that these non-amended claim are now in a condition for allowance.


Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached Appendix is captioned "Version with markings to show changes made".

All objections and rejections having been addressed, it is respectfully submitted that the present application is in a condition of allowance. Applicant requests that the finality of the office action be withdrawn and that a Notice of Allowance be mailed.

The Examiner is urged to call the undersigned at the number below should there be any concerns regarding entry of this amendment.

CHARGE STATEMENT: The Commissioner is hereby authorized to charge fees that may be required relative to this application, or credit any overpayment, to our Account 03-3975, Order No. 012907-0239352 (VG-001).

Respectfully submitted,
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APPENDIX**VERSION WITH MARKINGS TO SHOW CHANGES MADE****IN THE CLAIMS**

11. (Amended) (Allowed) [A]The method according to claim 4, wherein said delay amount of step (d) is a function of a duration of overflow within said portion of the new data stream.

12. (Amended) (Allowed) [A]The method according to claim 4, wherein said delay amount of step (d) is a function of a duration of a single instance of overflow within said portion of the new data stream.

13. (Amended) (Allowed) [A]The method according to claim 4, wherein said delay amount of step (d) is a function of a longest duration instance of overflow within said portion of the new data stream.

14. (Amended) (Allowed) [A]The method according to claim 4, wherein said delay amount of step (d) is equal to a number of data packets of said portion during a longest duration instance of overflow within said portion of the new data stream.

15. (Amended) (Allowed) [A]The method according to claim 4, wherein step (d) further comprises:

causing a subsequent portion of said new data stream to be accelerated by an acceleration amount corresponding to said delay amount, if the new data stream is transmitted.

25. (2x Amended) (Objected to) (Amended) [The] A method[according to claim 24] for splicing digitally encoded data streams, including an old data stream and a new data stream, comprising:

- (a) modifying a current timing reference of the new data stream to correspond with a splice-out point of the old data stream and a splice-in point of the new data stream, thereby forming a modified new data stream timing reference,** wherein said modified new data stream timing reference[of step (a)] further corresponds with a timing gap between a first decoding time for decoding a last frame of the old data stream and a second decoding time for decoding a first frame of the new data stream;
and
- (b) aligning a portion of the new data stream with a portion of the old data stream according to said modified new data stream timing reference, such that a transition from the old data stream to the new data stream, during playback, will be substantially imperceptible.**

26. (2x Amended) (Objected to) (Amended) The method according to claim[24] 25, wherein determining said modified new data stream timing reference includes:

- (i) determining said current timing reference of the new data stream;
- (ii) determining a delay between said current timing reference and a current decoding time of a frame of the new data stream;
- (iii) determining a new decoding time of said frame of the new data stream that corresponds with a sum of said current decoding time and an inter-frame delay between a decoding time for decoding a last frame of the old data stream and a decoding time for decoding a first frame of the new data stream; and
- (iv) determining said modified new data stream timing reference as said new decoding time of step (iii) minus said delay of step (ii).

27. (3x Amended) (Objected to) (2x Amended) The method according to claim[24] 25, determining said modified new data stream timing reference includes:

- (i) determining a program clock reference of a first packet of said new data stream;

- (ii) determining a delay between transmission of a first sequence header of said new data stream and a first decode time stamp DTS of a first frame of said new data stream;
- (iii) determining a continuous DTS as a sum of said first DTS and an inter-frame delay; and
- (iv) determining a new data stream real-time transmit time as said continuous DTS of step (iii) minus said delay of step (ii).

28. (3x Amended) (Objected to) (2x Amended) The method according to claim[24] 25, wherein said aligning in step (b) sets a start time for transmitting the portion of the new data stream that corresponds with a decoding time for decoding the portion of the old data stream.

29. (3x Amended) (Objected to) (2x Amended) The method according to claim[24] 25, wherein said aligning in step (b) sets a start time for a decoder buffer to begin receiving the portion of the new data stream that corresponds with a decoding time for decoding the portion of the old data stream.

30. (2x Amended) (Objected to) (Amended) The method according to claim[24] 25, further comprising:

- (d) detecting a decoder buffer overflow condition that will result from said splicing, if the data streams are transmitted; and
- (e) correcting said overflow condition.

31. (3x Amended) (Objected to) (2x Amended) [The] A method[according to claim 24, wherein said determining of step (a) is preceded by] for splicing digitally encoded data streams, including an old data stream and a new data stream, comprising:

- (i) determining[the] a splice-out point of the old data stream:[and]
- (ii) determining[the] a splice-in point of the new data stream;

- (iii) modifying a current timing reference of the new data stream to correspond with the splice-out point of the old data stream and the splice-in point of the new data stream, thereby forming a modified new data stream timing reference; and
- (iv) aligning a portion of the new data stream with a portion of the old data stream according to said modified new data stream timing reference, such that a transition from the old data stream to the new data stream, during playback, will be substantially imperceptible.

34. (2x Amended) (Objected to) (Amended) The method according to claim 31, wherein said data streams include video and audio data, wherein step ([a]iii) includes determining a video splice-out point and an audio splice-out point, and wherein step ([b]iv) includes determining a video splice-in point and an audio splice-in point.

39. (2x Amended) (Objected to) (Amended) [The] A method[according to claim 24, wherein step (a) is preceded by] for splicing digitally encoded data streams, including an old data stream and a new data stream, comprising:

- (i) determining a first source for the old data stream and a second source for the new data stream;
- (ii) modifying a current timing reference of the new data stream to correspond with a splice-out point of the old data stream and a splice-in point of the new data stream, thereby forming a modified new data stream timing reference; and
- (iii) aligning a portion of the new data stream with a portion of the old data stream according to said modified new data stream timing reference, such that a transition from the old data stream to the new data stream, during playback, will be substantially imperceptible.

42. (2x Amended) (Objected to) (Amended) [The] A method[according to claim 24] for splicing digitally encoded data streams, including an old data stream and a new data stream, comprising:

- (a) modifying a current timing reference of the new data stream to correspond with a splice-out point of the old data stream and a splice-in point of the new data stream, thereby forming a modified new data stream timing reference, wherein at least one of said data streams is MPEG encoded; and
- (b) aligning a portion of the new data stream with a portion of the old data stream according to said modified new data stream timing reference, such that a transition from the old data stream to the new data stream, during playback, will be substantially imperceptible.

44. (2x Amended) (Objected to) (Amended) The method according to claim[24] 42, wherein step (a) is followed by transmitting a portion of the old data stream.

45. (3x Amended) (Objected to) (2x Amended) The method according to claim[24] 42, wherein step (b) is followed by transmitting the portion of the new data stream.

49. (3x Amended, added in #47) (Objected to) (2x Amended) [The] A computer-readable storage medium[according to claim 47, wherein the step of determining the splice-out point is preceded by] storing program code for causing a computer to perform the steps of:

determining a new data stream pair to be spliced contemporaneously with another data stream pair; and

initiating program code for splicing said new data stream pair;

creating at least one data storage structure for storing portions of said old and new data streams;[and]

storing portions of said old and new data streams in said at least one data storage structure[.];

determining a splice-out point within an old data stream;

determining a splice-in point within a new data stream; and

determining a new data stream real-time transmit start time.

80. (3x Amended, added in #79) (Objected to) (2x Amended)[The apparatus according to claim 79,] A digitally encoded data stream transmitter comprising:

shifting means for determining an amount by which scheduled transmission times of data stream portions are to be accelerated and delayed, such that certain data portions are accelerated to make up for previously introduced delay of other data portions, wherein said data stream portions include a new data stream portion with new data stream data and said new data stream data is received as a plurality of data packets; and

transmitting means for transmitting said data stream portions at transmission times accelerated and delayed by the amount determined by said shifting means.

102. (Amended, added claim 98) (Objected to)[The] A method[according to claim 98 wherein the steps of delaying and accelerating are performed in real time] for removing an overflow condition comprising the steps of:

obtaining first and second digitally encoded data stream portions, with at least one of the first and second digitally encoded data stream portions containing no special splicing characters;

outputting the first digitally encoded data stream portion;

detecting whether a portion of the output of the second digitally encoded data stream portion would cause said overflow condition;

delaying in real time a part of said second data stream portion for a delay time that prevents said overflow condition; and

accelerating in real time a subsequent portion of the second data stream that follows the portion of the second data stream portion to substantially make-up for said delay time.

106. (Amended, added in claim 1) (Objected to)[The] A method[according to claim 1] for removing an overflow condition comprising the steps of:

detecting a first digitally encoded data stream portion causing said overflow condition;
delaying said first data stream portion for a delay time that prevents said overflow conditions; and
accelerating a second data stream portion that follows said first data stream portion to substantially make-up for said delay time,

wherein the steps of delaying and accelerating operate upon the first data stream portion and the second data stream portion, respectively, that each contain a plurality of program clock references.

116. (Amended, added in claims 1 & 115) (Objected to)[The] A method[according to claim 115] for removing an overflow condition comprising the steps of:

detecting a first digitally encoded data stream portion causing said overflow condition;
delaying said first data stream portion for a delay time that prevents said overflow conditions; and
accelerating a second data stream portion that follows said first data stream portion to substantially make-up for said delay time,

wherein the steps of delaying and accelerating operate upon the first data stream portion and the second data stream portion, respectively, that each contain a plurality of video frames and at least some of the video frames in each of the first data stream portion and the second data stream portion each contain a decode time stamp field.

119. (Amended, added in claims 1, 85 & 87) (Objected to)[The] A method[according to claim 87] for removing an overflow condition comprising the steps of:

detecting a first digitally encoded data stream portion causing said overflow condition;

delaying said first data stream portion for a delay time that prevents said overflow conditions; and

accelerating a second data stream portion that follows said first data stream portion to substantially make-up for said delay time.

wherein:

the steps of detecting, delaying and accelerating are performed in real-time;

the step of delaying inserts null packets;

the step of accelerating deletes other null packets; and

the steps of delaying and accelerating operate upon the first data stream portion and the second data stream portion, respectively, that each contain a plurality of program clock references.

124. (Amended, added in claim 2)(Objected to + §112)[The apparatus according to claim 2] An apparatus for removing an overflow condition comprising:

means for detecting a first digitally encoded data stream portion causing said overflow condition;

means for delaying said first data stream portion for a delay time that prevents said overflow condition; and

means for accelerating a second data stream portion that follows said first data stream portion to substantially make-up for said delay time.

wherein the means for delaying and accelerating operate upon the first data stream portion and the second data stream portion, respectively, that each contain a plurality of program clock references.

133. (Amended, added in claims 132 & 2) (Objected to + §112)[The apparatus according to claim 132] An apparatus for removing an overflow condition comprising:

means for detecting a first digitally encoded data stream portion causing said overflow condition;

means for delaying said first data stream portion for a delay time that prevents said overflow condition; and

means for accelerating a second data stream portion that follows said first data stream portion to substantially make-up for said delay time,

wherein:

the means for delaying and accelerating operate upon the first data stream portion and the second data stream portion, respectively, that each contain a plurality of video frames; and

at least some of the video frames in each of the first data stream portion and the second data stream portion each contain a decode time stamp field.

136. (Amended, added in claim 20) (Objected to)[The] A method[according to claim 20] for correcting overflow of a digitally encoded data stream decoder during splicing of data stream portions including an old data stream portion and a new data stream portion, comprising causing a delay of a scheduled transmission time of at least a part of the new data stream data portion and an acceleration of a subsequent part of the new data stream portion, wherein the steps of causing the delay and the acceleration operate upon the old data stream portion and the new data stream portion, respectively, that each contain a plurality of program clock references.

139. (Amended) (Objected to under §112) The method according to claim 138 wherein at least some of the video frames in each of the old data stream portion and the[newdata] new data stream portion further include a presentation time stamp field.

144. (Amended, added claims 143 & 20) (Objected to)[The] A method[according to claim 143] for correcting overflow of a digitally encoded data stream decoder during splicing of data stream portions including an old data stream portion and a new data stream portion, comprising causing a delay of a scheduled transmission time of at least a part of the new data stream data portion and an acceleration of a subsequent part of the new data stream portion, wherein:

the steps of causing the delay and the acceleration operate upon the old data stream portion and the new data stream portion, respectively, that each contain a plurality of video frames; and

at least some of the video frames in each of the old data stream portion and the new data stream portion each contain a decode time stamp field.

146. (Amended, added in claims 91 & 20) (Objected to)[The] A method[according to claim 91] for correcting overflow of a digitally encoded data stream decoder during splicing of data stream portions including an old data stream portion and a new data stream portion, comprising causing a delay of a scheduled transmission time of at least a part of the new data stream data portion and an acceleration of a subsequent part of the new data stream portion, wherein:

the steps of causing the delay and the acceleration are performed in real-time; and

the steps of causing the delay and the acceleration operate upon the old data stream portion and the new data stream portion, respectively, that each contain a plurality of program clock references.